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Advanced LCD Solutions Specialist

ENGINEERING SOLUTIONS



**TURNKEY & DESIGN
COMPONENT ASSEMBLY
CONTROLLER/CABLING**

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.

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 being 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



Engineering



AGDisplays provides LCD solutions that accommodate unique specifications during the engineering process. Our reliable displays range from small to large size, open and closed frame monitors, and digital signage options. With value adds like touchscreen integration, our off the shelf products are quickly upgraded to meet your specifications.

All technicians are trained through a comprehensive program and workmanship is cross checked through our in-process inspection procedures. Quality control measures are performed on all designs leaving our facility.

AGDisplays offers extended lifecycle warranties and inspection services for even more equipment protection.

All design solutions are dependent on individual applications and lead to a completely unique technical solution to fulfill customer requirements.

Our team can help you acquire new, EOL or refurbished LCDs, and can customize virtually any panel to meet your specific requirements.



LED INTEGRATION

Retrofit advanced LEDs for sunlight readability and low power usage.

GLASS SUPPLY

Optical clarity, display strength with integrated coverglass & custom screen-print designs.

ASSEMBLY & INTEGRATION

LCD solutions are custom designed to your needs. We source parts & integrate your design in our US-based facility.

CONTROLLER/CABLING

We provide advanced generation LED controller and cable connectors for high output performance.

QUALITY MEASURES

Our workmanship is held to top standards, we perform regular inspections and quality control measures.

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.

SPECIALTY DISPLAYS

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

List of Products



RUGGED MOBILE

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



TABLETS

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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.



High Bright Integration



AGDisplays provides LED backlight solutions that are customized to your requirements, with flexible brightness and design customization. We expertly utilize dynamic color mixing and color sequencing capabilities.



AGDisplays are considered pioneers in high bright LED technology. We carry our own line of High Bright LED rails that we continue to advance as the industry changes. We offer custom-sized LED backlight solutions that we design and tailor to custom-fit your exact needs.

The AGDisplays design team works expertly with your specifications to integrate LED designs without compromising quality and readability. Our dependable component selections make the LED backlights and controllers offered by AGDisplays some of the most reliable in the industry.

BENEFITS

- High sunlight readability
- NVIS-compatible options
- High color gamut achievable
- Lower EMI output and better EMI resistance
- Improved shock and vibration
- Extended lifespan: 10,000-100,000 hours
- Durable in extreme hot and frigid cold
- Protection against extreme humidity
- Low power consumption & high brightness output
- Environmentally safe: LEDs are ROHS-compliant, mercury- & lead-free, reduced EMI emissions
- Smaller LEDs for a slim and light design
- Custom-manufactured LED controllers

High Bright Integration

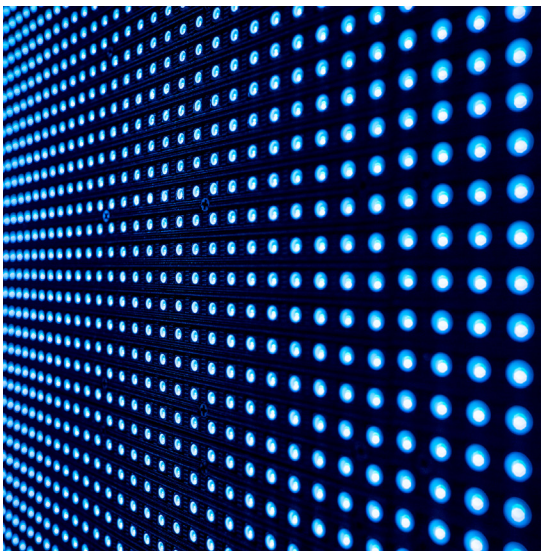


LED backlighting is typically designed as edge-lit or in a direct backlighting arrangement. Both designs have the LEDs concentrated into a diffuser source (light guide of the display) distributing the light uniformly throughout the viewing area.



EDGE-LIT BACKLIGHTING

With an edge-lit backlight design, LEDs are aligned along edge of the internal light guide of the LCD. The backlight array may be mounted on one, two, or all four edges, depending on the size of the display and the amount of luminance required. With this design, light from the LEDs is captured and spread across the viewing area by way of the light guide. Benefits of this design include a slimmer profile and lower cost of LEDs. This design is easily designed into any sized LCD, and is a great option for thin applications. ACDisplays uses our low footprint Generation 4 high bright LEDs in this and our direct backlight design.



DIRECT BACKLIGHTING

In a direct backlighting arrangement, LEDs are placed in a flat array behind the light guide and the diffuser plate. Direct backlighting works as a uniform source of light, like most CCFLs. One of the pros of integrating a direct backlight arrangement is that it allows for local-dimming, which means the display is able to dim specific areas to create vivid images, drastically increase the apparent contrast ratio, provide precise color adjustment and enhance overall viewing quality. Blacks are true black and grays are more defined.

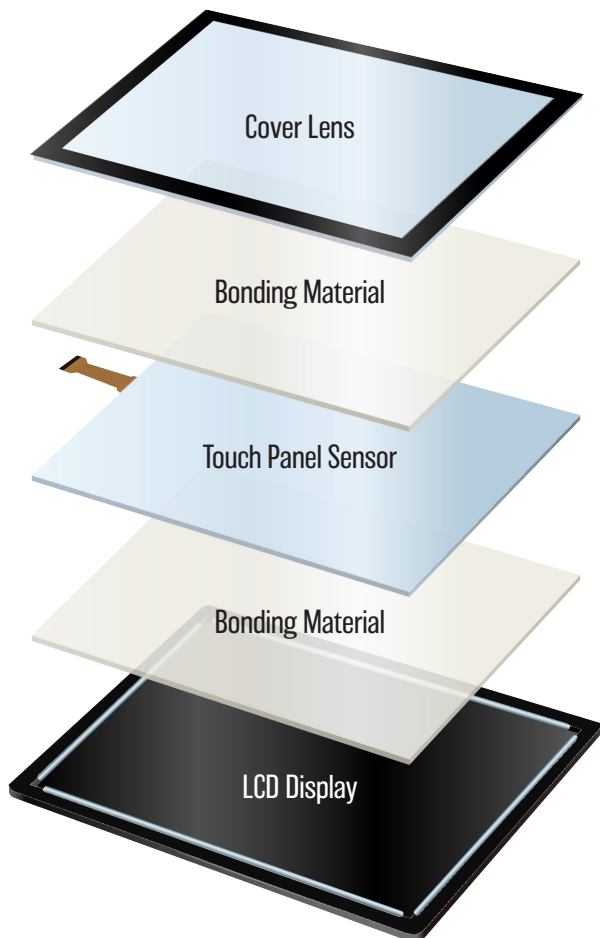
Custom Glass



Display assemblies with integrated strengthened cover glass have become a popular solution in years past. Utilizing a glass substrate has the superior advantage of increased hardness and scratch resistance as well as having a higher design value.

Pairing glass with various strengthening methods increases the robustness even more. AGDisplays offers a variety of cover glass options to add durability and protection to an LCD. Each material substrate provides unique benefits. Glass options we offer include chemically strengthened soda lime: clear and tinted, grey glass, low iron, AG etched, low emissivity, heat absorbing float glass; AGC Dragontrail™; Corning® Gorilla® Glass.

AGDisplays integrates the cover glass displays using a process called bonding. We offer three different bond integration methods: optical bond, OCA bond, and tape bond. Service options are available based on the size and specifications of your project.



BENEFITS

- Chemically-Strengthened
- Scratch and Crack Resistant
- Improved Surface Quality
- Enhanced Response
- Thin and Light without Fragility
- Promote Sunlight Readability
- Ruggedized
- Protection From EMI Interference

Custom Glass



CAPABILITIES

CUTTING

- Water jet: max material size 90"x46", min material size 2"x2"
- Scribe cutting: excalibur, bystronic, TLC, handcutting, precision XY sawing

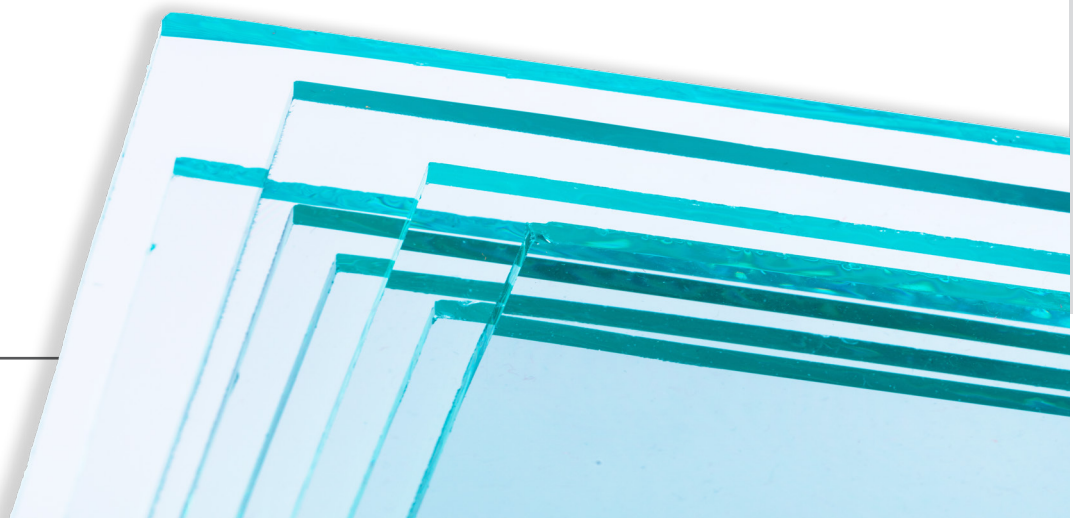
SCREEN PRINTING

- Ekra X4, Argon - Large, Cameo/Saturn, Saturn, Custom Press
- Ink types: epoxy/polyester, frit
- Etching & bus bars: Ekra X4, Cameo 18, Cameo 30, Saturn
- Edge printing

EDGING

- Angled and multilevel bevels, seams, corner dubbing, circle & flat ground, pencil & polished
- Edge types: flat ground, flat polish, flat polish with arris, pencil ground, pencil polished, safety seamed, dubbed corners, stepped and route surfaces, beveled edges, bullnose edges (half & full)

EDGING



Custom Glass



CHEMICAL STRENGTHENING

STANDARD SODA LIME

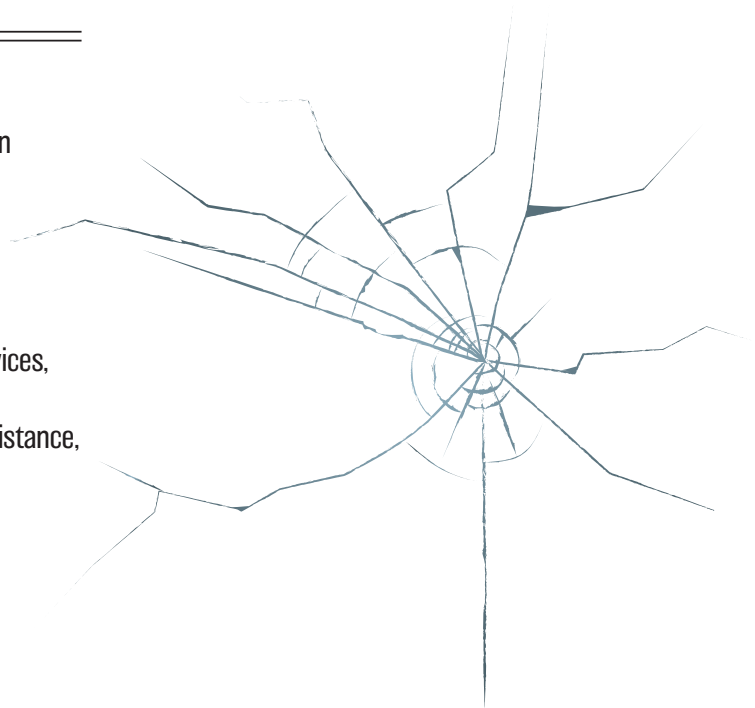
- Soda lime is toughened through a sodium and potassium ion exchange. Often requested for thin display applications
- Thickness: min .30 mm - max 19 mm

HIE GLASS

- 6-8x stronger than float glass.
- Typically used for electronic displays like tablets, mobile devices, touchscreens.
- Improves impact resistance, flexibility strength, scratch resistance, resistance to temp changes.

HEAT TEMPERING (ASTM C-1048-04)

- Heat strengthening
- Safety tempering (dices when broken)



POPULAR OPTIONS

AGC Dragontrail™ is a chemically strengthened and tempered float-glass material that is 6x more durable than soda lime glass. With this strength, the glass can be produced in thinner material.

Vicker's Hardness

Unstrengthened	596 kg f/mm ²
Strengthened	673 kg f/mm ²

Thickness Availability

Standard	0.8 to 1.1 mm
Special Request (MOQ req.)	0.5 to 5.0 mm

Corning® Gorilla® Glass is a thin sheet glass with a high degree of chemical strengthening. Benefits of Gorilla® Glass include high scratch resistance, high retained strength after use, and pristine surface quality.

Vicker's Hardness

Unstrengthened	534 kg f/mm ²
Strengthened	649 kg f/mm ²

Thickness Availability

0.4 mm to 2.0 mm

Assembly & Integration



AGDisplays offers Component Assembly and Integration services to provide LCD display options and peripherals, custom-designed to your needs. Your design components are sourced by AGDisplays, and carefully integrated in our US-based facility, providing you a true one-stop-shop for LCD solutions.



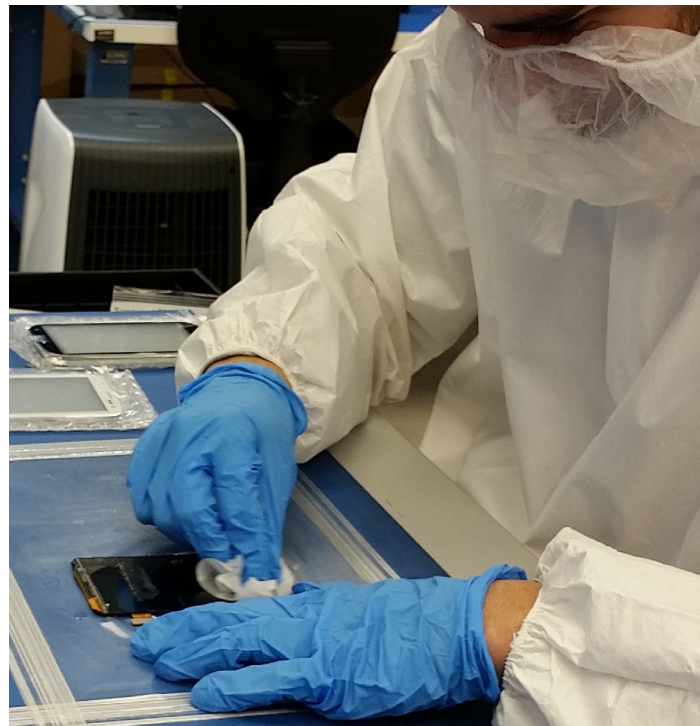
AGDisplays offers a wide selection of TFT-LCD displays and touch sensors. We source and support virtually all components such as controller boards, LED lighting systems and touchscreen sensors. If needed, value adds and custom solutions are available for upgrades.

By assembling LCD solutions in house, our US-based location lends itself to high flexibility in the production and manufacturing environment, helping us meet ever-changing specifications and deadlines.

If your design is already complete, AGDisplays will source and integrate components according to your specifications. Using our multiple layered procurement strategies, AGDisplays may source your components for cost-reduction, all while holding quality standards as priority.

BENEFITS

- ✓ **One point of customer support for order modifications or concerns that may arise.**
- ✓ **Full customization of display and performance features, including additional enhancements.**
- ✓ **Ordering process is simplified to only one point of contact and one completed shipment.**
- ✓ **Consistent and thorough documentation system to ensure accuracy and traceability.**
- ✓ **If quality or supply is disrupted, we manage compatibility and ensure top quality parts.**



Assembly & Integration

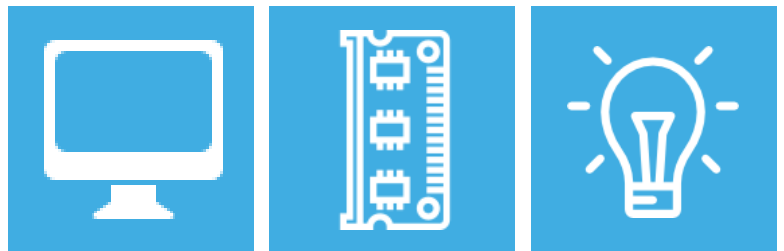


AGDisplays offers two variations of our assembly and integration service: project assembly/integration and project kitting. While we provide a virtually unlimited supply and range of display and component products, AGDisplays also offers LCD enhancements that are aimed to increase durability and functionality of your LCD panel in its operational environment.



ASSEMBLY AND INTEGRATION

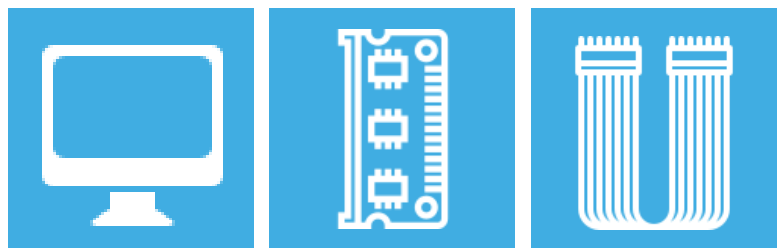
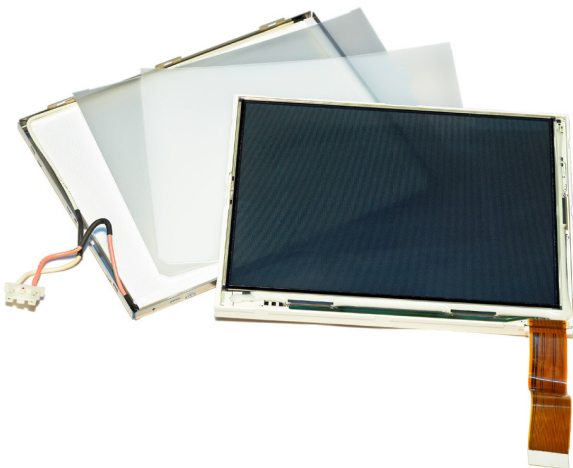
In a custom assembly build, components are added or modified to meet project specifications. An example of such an enhancement could be an added touch sensor, creating a touch-enabled LCD. The sensor would be integrated into the display component, and the customer would receive a completed project, the enhanced display with compatible touch controllers.



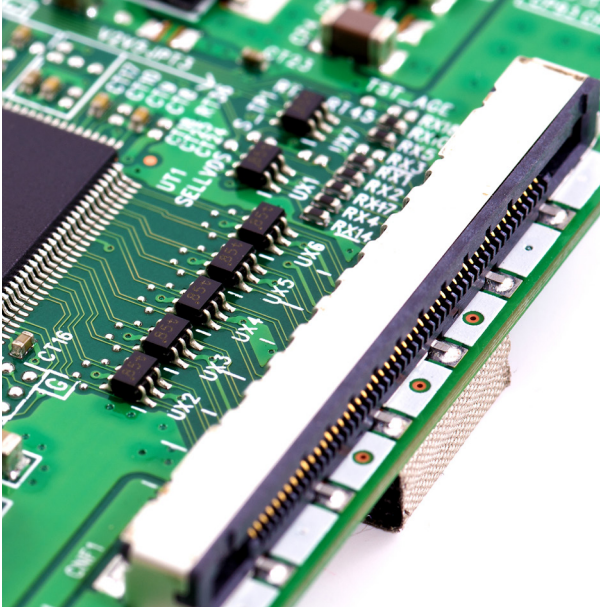
LCD KITTING

AGDisplays pairs and offers kits to customers so they can save on assembly costs. A kit may consist of a main display, a touch sensor, a controller, and cable sets.

Customers may order the kit according to a known or unknown LCD part number and the needs of their project.

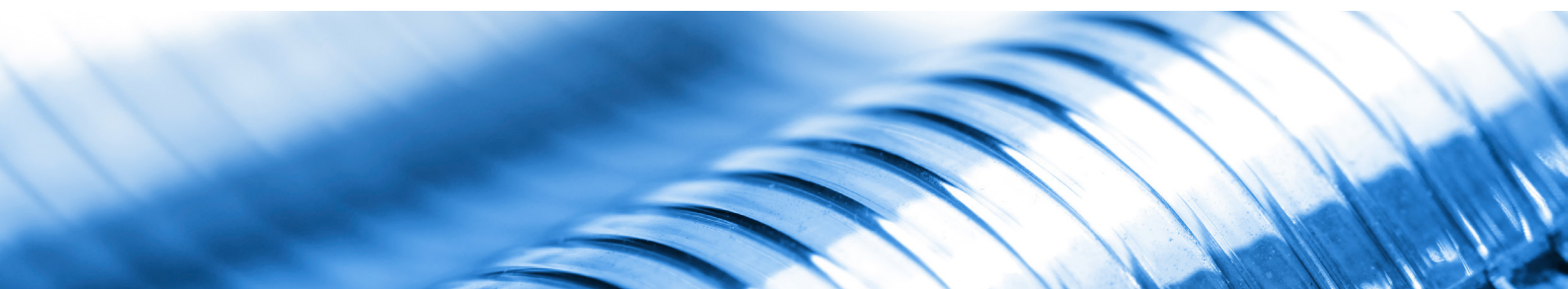
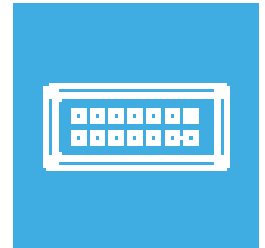
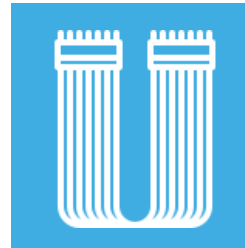


Cable Solutions



DEVELOPMENT KITS

Get your LCD project off the ground fast with AGDisplays' development kits for prototyping. We have a selection of high quality connectors with flying leads, designed by our experts for increased LCD compatibility and enhanced performance. Our team aims to improve design time and increase the lifecycle of your project components. That's why we combine the best quality cabling components for our development kits. AGDisplays can also provide pairing and sourcing of the cabling/interface to drive your unit.



FFC

With flat flex cable (FFC) design, we can utilize chip on flex technology to pair LCD and touchscreen controllers directly to the LCD. Cables are offered in standard sizes or can be customized to length.

HYBRID WIRES

Hybrid wires offer the benefits of both the discrete wire and the flat flex cable. The connected technology allows for easy replacement of bulky wire cabling and therefore saves space.

FPC

Flexible printed circuit (FPC) has the potential to replace many rigid boards or connectors in a design. The single-sided circuitry is ideal for dynamic/high-flex applications and those applications where thickness and space constraints are top priority.

Cable Solutions

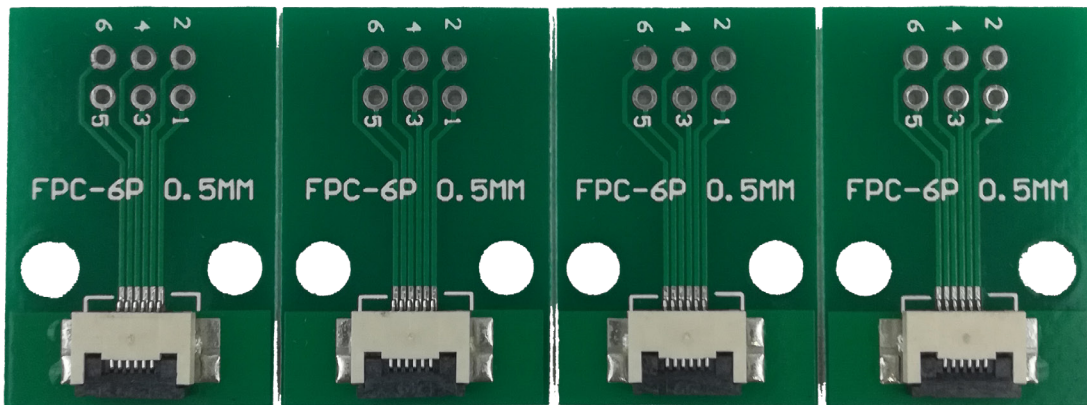


ADAPTER BOARDS

Adapter boards connect applications together using two or four layer boards, allowing for your project to meet power and connectivity requirements. AGDisplays sources adapter boards so building and implementing advanced wiring technology is easy and fast.

FPDI-1/VESA

These VESA FPDI-1 compliant wires provide a smooth insertion and extraction, aiding to secure connections and an easy lock mechanism. The advantages of using these flat connectors is that they allow for small dimensions because they have a low profile and a narrow width design.



MICRO COAX

AGDisplays utilizes micro coax cables to connect panels, motherboards and other LCD peripherals. We offer gauge as thick as 40 AWG at standard lengths. Our micro coax cables meet UL standards.

EXTENSIONS

AGDisplays offers custom extension cables to help you create a cohesive and unified design. We offer backlight cable extensions and adapters, flat flex cables, flex printed circuits and round wire.

OPEN ENDS

AGDisplays designs custom flying leads and open ended wiring assemblies for prototyping and benchwork needs. With thousands of cables at your fingertips, we provide you with the opportunity to create custom wiring prototypes.

LED Controllers



AGDisplays are considered pioneers in high bright LED technology. We carry our own line of High Bright LED rails that we continue to advance as the industry changes. Our controllers are designed to seamlessly integrate with your unique panel specifications or virtually any OEM LCD panels. The difference between AGDisplays and our competitors is that our controllers provide a high brightness output while still keeping power consumption low.

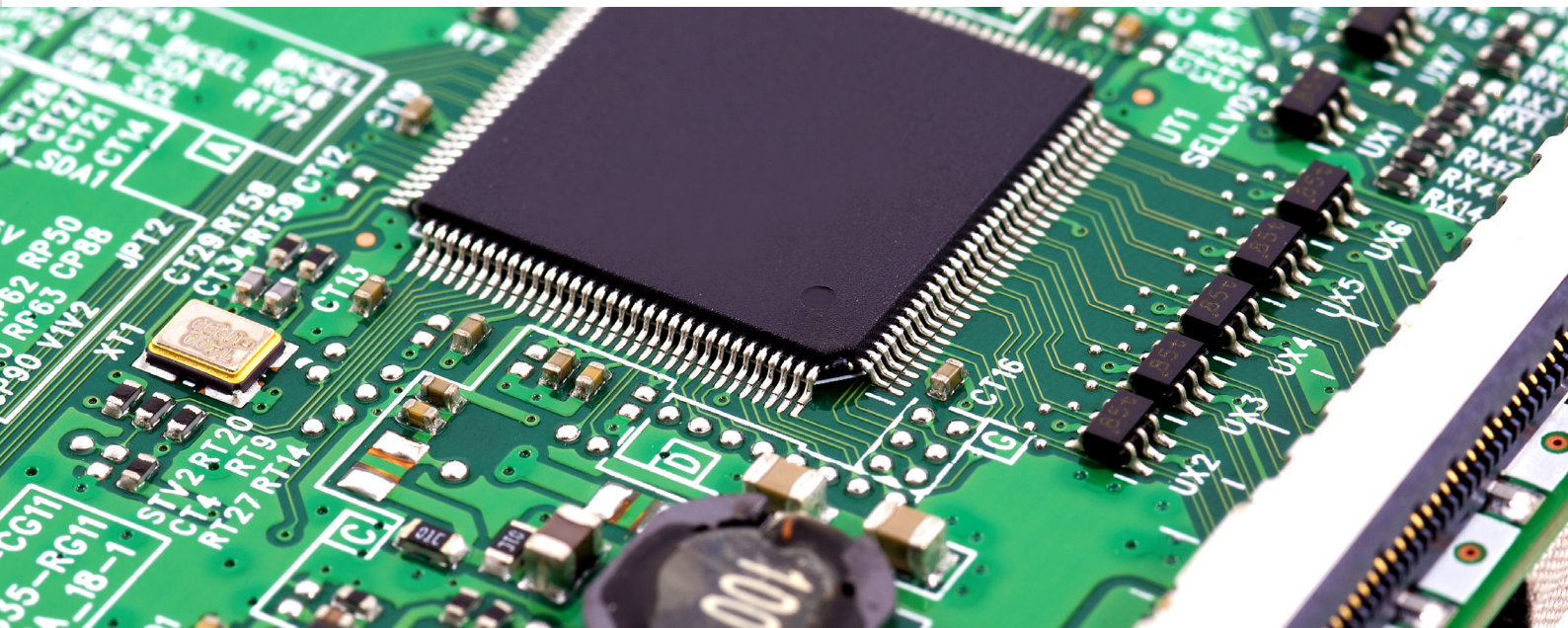
Our controller capabilities have a wide adjustable input range that can be adjusted anywhere from 12 to 24 volts. All of our controllers are constant current which means they automatically regulate and adjust the current appropriately to maintain a safe and constant current to your LED rails. The controllers are DC to DC power inverters with an error loop filter, and pulse width modulation dimmer control for your LED backlight strings. Our experts modify firmware to accommodate your design's dimming cycle/curve. Our customizable LEDs are designed to drive High Bright LED boards or a stock LED backlight.

AGDisplays also sources the most common types of controllers by popular supply voltage, output voltage and more. Common Supply Voltage Sizes: 2.3 to 5.5 V, 2.7 to 5.5 V and 3 to 5.5 V.



AGDISPLAYS CONTROLLER BENEFITS

- High output, lower power consumption
- Wide adjustable input range, 12-24 volts
- Constant current
- DC to DC power inverter
- Error loop filter
- Pulse width modulation dimmer control
- For high bright LEDs, stock LEDs or NVIS dual mode LCDs



Additional Expertise



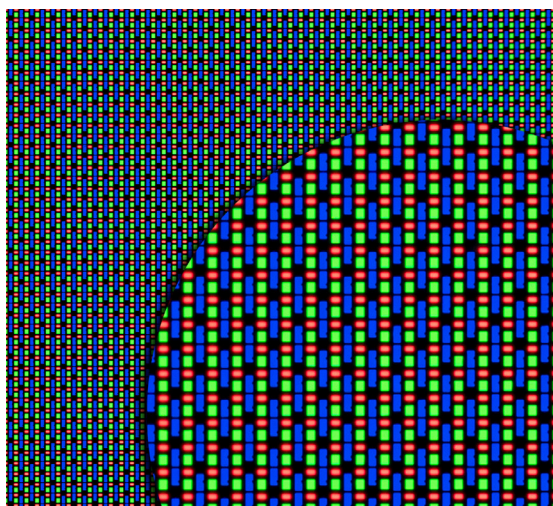
LIFECYCLE SUPPORT

AGDisplays works together with your teams to support your product's life from the conception to disposal. Implement an organized product lifecycle management program may be a challenge for companies who run into design and engineering challenges. We centralize the creation and management of all data and technology to support you in a successful lifecycle management system. At the end of a product's lifecycle, we can provide EOL display and component alternatives to extend your product's lifespan.

DROP IN REPLACEMENT

AGDisplays offers a drop in replacement service for customers who need to replace an LCD or LCD component when their original part is EOL. This service is also for customers who are looking for a cost effective, suitable replacements/upgrades to their existing LCDs. AGDisplays offers availability of standard or custom high-quality LCDs of virtually all shapes and sizes.

By simply providing us with your panel part number, general specifications and any other upgrade requirements, we source these products for you or we can source an equivalent replacement. Using a replacement LCD does not compromise on quality and compatibility; we ensure functionality and performance are top priority.



ZERO PIXEL INSPECTION

Zero Pixel Inspection is for customers who have a zero fail pixel standard. Customers may send LCD panels from OEM directly to AGDisplays for inspection. We inspect for hot, stuck and dead pixels, as well as evaluate LCD quality standards. We confirm and document our findings for verification purposes.

AGDisplays uses a meticulous objective visual verification process to ensure your quality standards are met and that LCD pixel defects are not present in your products. We receive panels from the OEM before they reach the customer and we verify that your zero-pixel specifications are being met. If the panel fails OEM specification grade, we perform an exchange for panels that are standard or above standard for your industry.

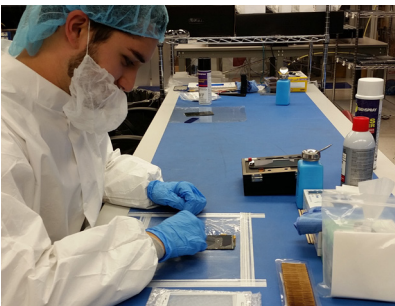
Thank You



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

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