GENERAL DIGITAL
OPTICAL BONDING

DISPLAY ENHANCEMENTS · OPTICAL SERVICES

BRIGHTNESS ENHANCEMENTS

Today's flat panel displays need to be able to withstand severe temperature extremes and solar radiation, as well as be readable when exposed to glare and reflection from direct and indirect sunlight. General Digital offers several brightness enhancement solutions that will meet your requirements.
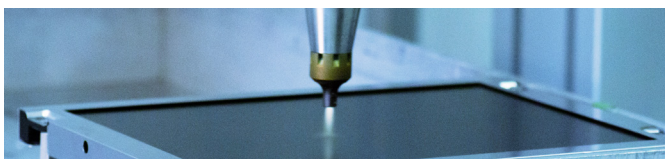
BENEFITS

» Increased brightness to 100% with enhancement films alone
» Improved display contrast and readability
» Improved display clarity and image quality
» Improved operating temperature range
» Superior uniformity

OPTIONS

We offer several options incorporating both passive and active backlight modifications to improve sunlight readability. One popular and cost-effective solution is GenFlective™ technology, a hybrid of Transflective and Passive Enhancements:

» Requires no more power than OEM panel
» Dissipates no more heat than OEM panel
» Simplifies integration of value-add display
» Easier to address cooling due to low power
» Typ. OEM luminance enhancement: 20–100%

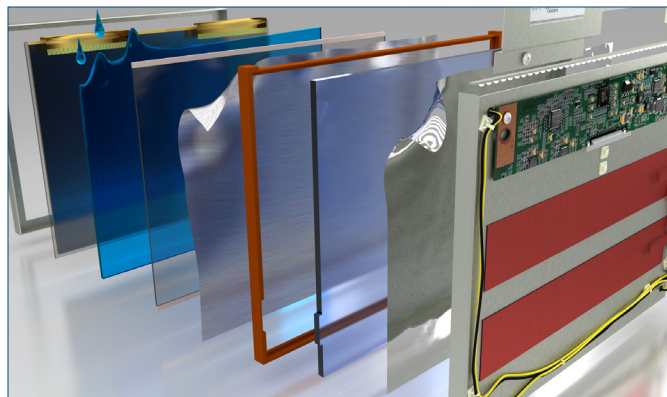Active Enhancement options include:

» LED Backlight
  › Standard and sunlight readable luminance
  › High color gamut
  › Lower heat and EMI emissions
  › Lower power consumption
  › Extended life expectancy
  › GD-OBL design compliant to MIL-STD-901D, MIL-STD-810F, MIL-STD-461E
» NVIS (Night Vision Imaging System)
  › Compliant to MIL-STD-3009, Classes A, B, C
» Dual mode switchable (Day/Night) controller
» Sizes ranging from 5" to 42" and beyond

FILM LAMINATIONS

Light emitting displays all suffer from a visibility problem when used under conditions that include high ambient lighting levels, such as kiosks, advertising displays, control towers and aircraft cockpits. We can passively enhance a display by applying optical films to its front surface, thereby improving brightness and contrast by reducing surface reflections. We offers film lamination services on customer-consigned material for all of the specialty films listed below, which are available for purchase.

FILMS AVAILABLE

» Antireflective Film (AR)
  › Reduces surface reflections, improving brightness and contrast 2 to 3 times
» Antireflective Film/Antiglare Film (AR/AG)
  › Reduces surface reflections, improving brightness and contrast 2 to 3 times; softens direct light source images in reflection
» Conductive Film
  › Reduces EMI/RFI emissions
  › Transparent film for touch screens
» Privacy Film
  › Reduces and limits viewing angle
  › Redirects light and retains data privacy
» Specialty Films
  › Neutral Density increases contrast of display
  › Color Selective alters output color of screen
  › Antistatic
  › InfraRed (IR)
» Optical Films for Reflective LCDs
  › Polarizing, retardation, and diffused films are combined into a single film

OPTICAL BONDING

Optically bonding a flat panel display improves both optical performance and durability. General Digital is able to remove all of the air gaps, thus reducing the number of internal reflecting surfaces. Providing a durable adhesion between the flat panel and the overlay improves the displays' ability to resist shock, vibration and moisture.

BENEFITS

- » Increased luminance
- » Increased contrast
- » Reduced internal reflections
- » Improved ruggedization
- » Vandal protection
- » Extended Operating Temperature Range through the use of bonded display heaters (–55°C with our proprietary formula)
- » Elimination of condensation/moisture between display and overlay

ADHESIVES

- » Silicone-RTV
- » Epoxy
- » Polyurethane
- » Ultraviolet (UV)

TARGET COMBINATIONS

- » Glass (overlay) to flat panel
- » Glass to glass (robust anti-vandal shield)
- » Polycarbonate to glass (flat panel)

OVERLAY TYPES

- » Contrast enhancement filters
- » Anti-vandal shields
- » EMI/RFI shields
- » Heaters—to extend the operating temperature in cold environments
- » Touch Sensors—support for virtually any touch technology or manufacturer
- » Privacy filters

SPECIALTY BONDS

- » XO-Fraim™
- » Extended Temperature Bond (–55°C to +100°C)
- » GenGard™ Extreme Environment Bond

TYPES OF FILTER COATINGS/ETCHINGS

- » Antireflective (AR)
  - › Single-sided (for bonded filters)
  - › Double-sided (for non-bonded filters)
- » Antiglare (AG)
  - › Chemically etched
  - › Mechanically etched
- » Easy clean (smudge resistant)

NVIS COMPATIBLE LCD MONITORS

To make a display NVIS (Night Vision Imaging System) compatible, General Digital expertly re-engineers the existing display hardware to virtually eliminate the emission of high levels of IR radiation. In some instances, we install entirely new backlighting systems, using the latest display technology. Both approaches are fully compliant with MIL-STD-3009. By configuring an LCD monitor to be night vision goggle compatible, an NVG user is easily able to view their surroundings, as well as information on a display screen.

MORE PRODUCTS AND SERVICES

- » Condensation and Moisture Prevention
- » Contract Manufacturing
- » Support Electronics

Visit our Web site today, where we have more information on a variety of services, and downloads of technical documentation.

CODES & ID NUMBERS

Corporate Structure: SBA Small Business Concern

CAGE	1JA77	**DDTC**	Registered
SAM/CCR	Registered	**DUNS**	06-551-9563
ISO	9001:2015 QMS Certified		

DISPLAY SYSTEMS & OPTICAL BONDING LABORATORIES

NAICS | 334111, 334118, 334119, 334220, 334290, 334310, 334418, 334419, 334511, 541330, 811212

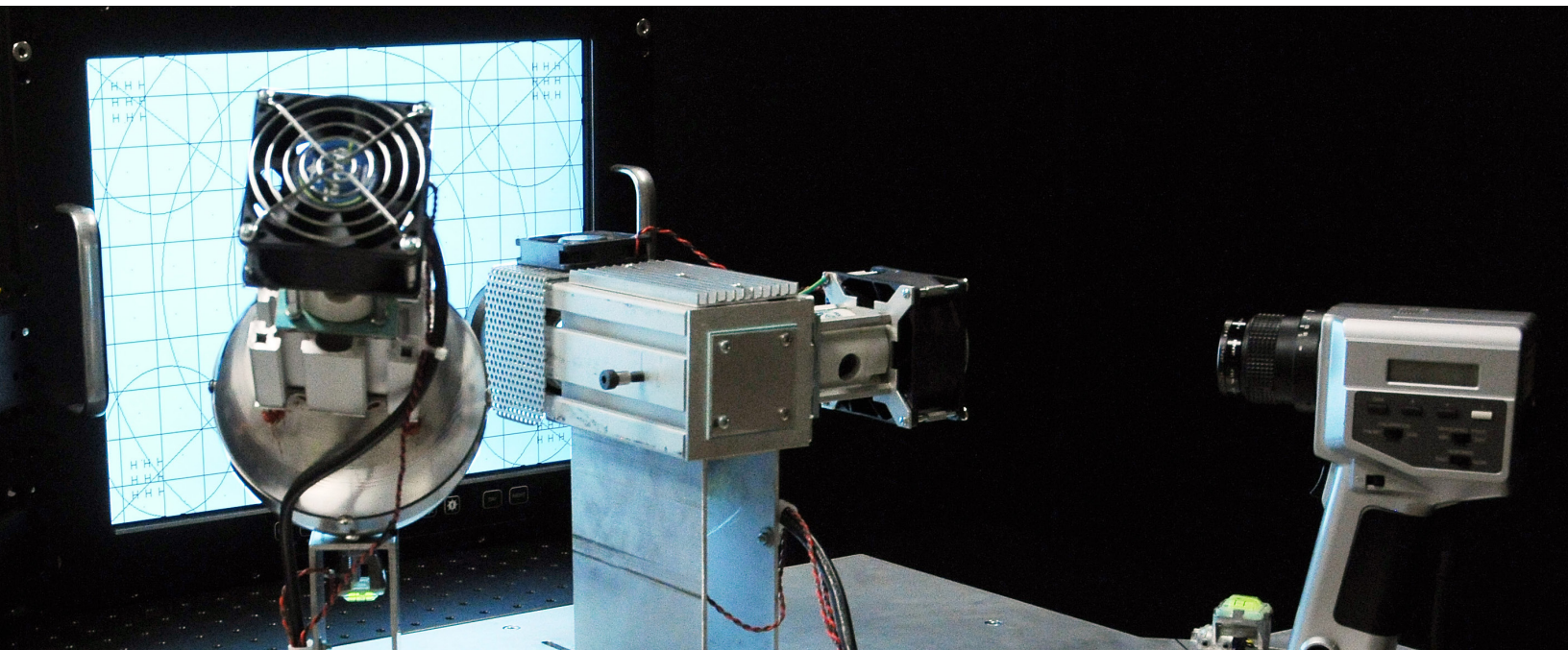**PSC** | AC64, 5836, 5895, 5955, 5975, 5980, 5998, 5999, 6130, 6150, 7490

SOFTWARE SERVICES

NAICS | 541511, 541512, 541519

PSC | 7010, 7021, 7025

Avionics Compliance **RTCA** DO-178

Medical Compliance **IEC** 62304

Industrial Compliance **IEC** 61508 **IEC** 61131

Transportation Compliance **IEC** 62279 **IEC** 61508

GENERAL DIGITAL

An SBA Small Business Concern

ISO 9001:2015 QUALITY MANAGEMENT SYSTEM CERTIFIED

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